AF

TRANSMITTAL OF APPEAL BRIEF (Large Entity)	Docket No. 1324

In Re Application Of: **LAUMEN, J., ET AL**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
09/623,946	11/03/2000	CHAUDRY, M.	278	2133	

Invention: **APPARATUS AND METHOD FOR ENCODING AND DECOING DATA**

COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on **11/30/2005**

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MICHAEL J. STRIKER

Typed or Printed Name of Person Mailing Correspondence

cc:

UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Mujtaba M. Chaudry

Art Unit: 2133

In re:

Applicant: Josef LAUMEN

Serial No.: 09/623,946

Filed: November 3, 2000

BRIEF ON APPEAL

November 30, 2005

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is a Brief on Appeal from the final rejection of claims 1-8 and 10-12 by the primary Examiner.

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On 11/30/05

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Real Party of Interest

The real party of interest is Robert Bosch GmbH having a business address of Postfach 30 02 20, D-70442 Stuttgart, Germany.

Related Appeals and Interferences

There are no prior and pending appeals, interferences or judicial proceedings known to appellant, the appellant's legal representative, or assignee which may be related to, directly affect, or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of Claims

In the Office Action of April 19, 2005 the Examiner rejected claims 1-8 and 10-12 under 35 U.S.C. 103(a) as being unpatentable over a Steffan B. Wicker (Error Control System) in view of the patent to Gordon, et al (U.S. patent no. 5,148,432).

Status of Amendments

No Amendments have been filed subsequent to the above identified Office Action.

Summary of Claimed Subject Matter

The present application contains three independent claims, namely claims 1, 6, and 7.

Claim 1 defines an apparatus for encoding data in accordance with a fire code $G(x) = P(x)(1+x^c)$, where $P(x)$ is an irreducible polynomial of the degree m, which the value for C can be freely set within predetermined limits and changed so that a code with variable redundancy can be obtained, wherein

- the apparatus is formed so that it can implement a plurality of different fire codes, the different fire codes are selected for coding of input data in dependence on a control value, to produce the code with variable redundancy, and
- the variable redundancy produced by the fire code is used to dynamically adapt a data rate of a source data to an available band width of a respective data channel,
- when the data rate of the source data varies and for the data channel only fixed rates for data rate are possible, by adding additional redundancy bits.

Claim 6 defines a method for encoding data in accordance with a fire code $G(x) = P(x)(1+x^C)$, where $P(x)$ is an irreducible polynomial of the degree m, wherein

- the value for C can be freely set within predetermined limits and changed so that a code with variable redundancy can be obtained, and
- the variable redundancy produced by the fire code is used to dynamically adapt a data rate of a source data to an available band width of a respective data channel so that with only fixed values for a data rate for the transmission channel and variable data rate of a source, transmission reliability can be increased by selecting coding and corresponding polynomials in dependence on different situation.

Claim 7 defines a method for decoding data in accordance with a fire code $G(x) = P(x)(1+x^C)$, where $P(x)$ is an irreducible polynomial of the degree m, wherein

- the value for C can be freely set within predetermined limits and changed so that a code with variable redundancy can be obtained, and
- the variable redundancy produced by the fire code is used to dynamically adapt a data rate of a source data to an available band

width of a respective data channel so that with only fixed values for a data rate for the transmission channel and variable data rate of a source, transmission reliability can be increased by selecting codings and corresponding polynomials independence on different situation.

This is essentially disclosed in pages 2-10 of the specification and shown in FIgures 1-4 of the drawings.

Grounds of Rejection to be Reviewed on Appeal

In the Office Action claims 1-8 and 10-12 were rejected under 35 U.S.C. 103(a) over the Wicker reference in view of the U.S. patent to Gordon.

In the Examiner's opinion the present invention can not be derived from these references as a matter of obviousness.

Turning now to the references and particularly to the patent to Gordon, it can be seen that this reference discloses a disk memory array in which different levels of redundancy are proposed. The different level of redundancy is obtained in that different redundant features are selectively activated. As specifically explained in column 9, lines 23-28, "if

the customer desires one level of redundancy the exclusive-OR redundancy algorithm is enabled. If a customer desires two levels of redundancy both the exclusive-OR redundancy and Read-Solomon redundancy is provided".

In the Wicker reference the replacement of fire code and its general properties with respect to magnetic memory systems are described.

In the Examiner's opinion the additional activation of different redundancy features (EXOR/Read-Solomon) in combination with the general disclosure of the fire code is pertinent to the apparatus as defined in claim 1 of the present application, which is designed to code different fire codes, wherein each this code is selected depending on a control value for the code of input data (see claim 1).

It should be specifically emphasized that the reference discloses no different numbers of redundant features for influencing the (total) redundancy, but instead the exchange of one redundancy feature by another, namely coding with a fire code of the redundancy X by a coding with a fire code of the redundancy Y.

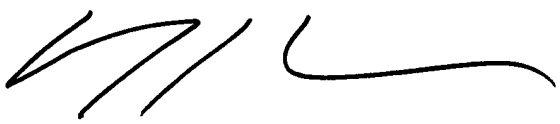
The references contain no hint or suggestion that in a continuous operation the selected redundancy feature can be replaced as claimed.

In accordance with the present invention the data transmission is performed through a transmission data channel, wherein only fixed rates for the data rate are possible, however the data rate of the source data varies. It is therefore possible in a particularly simple manner to increase the transmission reliability by adding additional redundancy bits (for example selection of the corresponding fire code), as disclosed in the paragraph bridging pages 4 and 5 of the specification.

It is therefore respectfully submitted that the claims currently on file should be considered as patentably distinguishing over the art and should be allowed.

Reconsideration of the present application, reversal of the Examiner's rejection of the claims, and allowance of the present application is most respectfully requested.

Respectfully submitted,



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APPENDIX

1. An apparatus for encoding data in accordance with a fire code $G(x) = P(x)(1+x^C)$, where $P(x)$ is an irreducible polynomial of the degree m, characterized in that the value for C can be freely set within predetermined limits and changed so that a code with variable redundancy can be obtained, the apparatus is formed so that it can implement a plurality of different fire codes, the different fire codes are selected for coding of input data in dependence on a control value, to produce the code with variable redundancy, and the variable redundancy produced by the fire code is used to dynamically adapt a data rate of a source data to an available band width of a respective data channel, when the data rate of the source data varies and for the data channel only fixed rates for data rate are possible, by adding additional redundancy bits.

2. The apparatus according to claim 1, characterized in that the upper limit for C is predetermined by a maximal value and that the encoding apparatus has storage elements and modulo 2 adders whose number corresponds to a maximal number, and that switches are provided, by means of which the storage places and modulo 2 adders can connected together into an encoder according to the selected value C.

3. A decoder for decoding data in accordance with a fire code $G(x) = P(x)\,(1 + x^c)$, where $P(x)$ is an irreducible polynomial of the degree m, characterized in that the value for C can be freely set within predetermined limits.

4. The decoder according to claim 3, characterized in that a disk register is provided, wherein the length of the disk register can be set as a function of the value for C.

5. The decoder according to claim 4, characterized in that a second disk register is provided, whose length can be set to a value B, where in all cases, B is less than m and where B indicates the maximal number of correctable bit errors.

6. A method for encoding data in accordance with a fire code $G(x) = P(x)\,(1+x^c)$, where $P(x)$ is an irreducible polynomial of the degree m, characterized in that the value for C can be freely set within predetermined limits and changed so that a code with variable redundancy can be obtained, and the variable redundancy produced by the fire code is used to dynamically adapt a data rate of a source data to an available band width of a respective data channel so that with only fixed values for a data rate for the transmission channel and variable data rate of a source,

transmission reliability can be increased by selecting coding and corresponding polynomials in dependence on different situation.

7. A method for decoding data in accordance with a fire code $G(x) = P(x)(1 + x^c)$, where $P(x)$ is an irreducible polynomial of the degree m, characterized in that the value for C can be freely set within predetermined limits and changed so that a code with variable redundancy can be obtained, and the variable redundancy produced by the fire code is used to dynamically adapt a data rate of a source data to an available band width of a respective data channel so that with only fixed values for a data rate for the transmission channel and variable data rate of a source, transmission reliability can be increased by selecting codings and corresponding polynomials independence on different situation.

8. The method according to claim 7, characterized in that the values b and d for the error correction and detection properties of the incorporated redundancy can be freely set within predetermined limits and in accordance with d=c+1-b.

Claim 9 cancelled.

10. An apparatus as defined in claim 1, wherein values b and d for the error correction and detection properties of the incorporated redundancy are adapted to the respective quality of the transmission value, and the values b and d are adapted to a bit error rate of the transmission channel.

11. A method as defined in claim 6, wherein values b and d for the error correction and detection properties of the incorporated redundancy are adapted to the respective quality of the transmission value, and the values b and d are adapted to a bit error rate of the transmission channel.

12. A method as defined in claim 7, wherein values b and d for the error correction and detection properties of the incorporated redundancy are adapted to the respective quality of the transmission value, and the values b and d are adapted to a bit error rate of the transmission channel.